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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/818,686	03/28/2001	Satoshi Nakamura	040894-5653	2438

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EXAMINER

CHERVINSKY, BORIS LEO

ART UNIT	PAPER NUMBER
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2835

DATE MAILED: 11/29/2001

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/818,686

Applicant(s)

NAKAMURA, SATOSHI

Examiner

Boris L. Chervinsky

Art Unit

2835

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the numerous informalities and typographical errors.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. The claims 1-14 are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.
4. The terms used in the claims such as: "face-mounted", "face –contact", "front surface" are not clearly defined in the specification or in the claims.
5. Claims 6 and 9 are improper because they refer as to be dependent on "one of claims".
6. The terminology of the claims is not always consistent throughout the claims; the rear surface is designated by two different reference numbers in the specification 2a and 2b (page 11, lines 13 and 16).

7. Claim 7 indefinite because the functional recitation that the corrugated member is extruded from long-lengths of a belt-shaped hoop material is method of manufacture and does not provide further structural limitation to the claim, the term "corrugated member" has not been clearly defined in the specification and, as best understood, refers to the fins with reference numerical character 40'.
8. Claim 10 recites the limitation "said first heat radiating pattern" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.
9. Claim 10 recites the limitation "said heat radiating pattern" in line 2. There is insufficient antecedent basis for this limitation in the claim.
10. Claim 12 recites the limitation "said first heat radiating pattern" in line 2. There is insufficient antecedent basis for this limitation in the claim.
11. Claim 13 is vague and indefinite because the functional recitation that fins stand when circuit board is used in the standing state is conditional and does not provide clear indication of its orientation.
12. Claim 14 is misdescriptive and grammatically incorrect.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 1-3, 8-14 are rejected under 35 U.S.C. 102(a) as being anticipated by Christopher et al.

Christopher et al. disclose a circuit board 201 having an electronic components 119, 225 provided with a heat radiating plate (not numbered) and being mounted on its surface by soldering, heat radiating means 107 soldered to the underside of the circuit board, a first and second heat radiating patterns provided on the upper side of the circuit board and the underside of the circuit board and the heat radiating patterns are connected by plated through holes 205 and 229.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 4, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christopher et al.

Christopher et al. disclose the claimed invention except for the material of plated layer containing tin or nickel. It would have been obvious to one having ordinary skill in the art at the time the invention was made to , since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

17. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christopher et al. in view of Miyagi et al.

Christopher et al. disclose the claimed invention except the heat radiating means having a plurality of fins. Miyagi et al. disclose the heat radiating means attached to the underside of the circuit board and having a plurality of fins. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have multiple fins attached to the heat radiating means as disclosed by Miyagi et al. in the structure disclosed by Christopher et al. for better heat dissipation. The functional recitation of claim 7 is narrative in form and limiting the method of manufacture, but does provide sufficient structure, which differentiates the final product from the product described in the prior art.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art listed in the PTO 892 form shows various details of the claimed invention as well as their combinations including the circuit board having a heat generating component attached to one side and a heat sink on the opposite side and being connected by heat conducting vias.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Boris L. Chervinsky whose telephone number is 703-308-5429. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P. Picard can be reached on 703-308-0538. The fax

phone numbers for the organization where this application or proceeding is assigned are 703-305-3431 for regular communications and 703-305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0658.

A handwritten signature in cursive script, reading "Boris L. Chervinsky". The signature is written in dark ink and is positioned above the printed name.

Boris L. Chervinsky, Patent Examiner
November 9, 2001